



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/509,367	05/17/2005	Joo-Ho Kim	1793.1503	4007
49455 7590 09/09/2008 STEIN, MCEWEN & BUI, LLP 1400 EYE STREET, NW SUITE 300 WASHINGTON, DC 20005				
EXAMINER				
DINH, TAN X				
ART UNIT		PAPER NUMBER		
2627				
MAIL DATE		DELIVERY MODE		
09/09/2008		PAPER		

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

# Office Action Summary

## Application No.

10/509,367

## Applicant(s)

KIM ET AL.

## Examiner

TAN X. DINH

## Art Unit

2627

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 20 June 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-72 is/are pending in the application.
- 4a) Of the above claim(s) 9-22, 31-44 and 53-72 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-8, 23-30 and 45-52 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB-08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

1) Applicant's election with traverse of Group I (claims 1-8,23-30 and 45-52) in the reply filed on 6/20/2008 is acknowledged. The traversal is on the ground(s) that no references show the different between phase-change type optical recording medium and magneto-optical recording medium and their recording/reproducing method/apparatus are not different. This is not found persuasive because: There are clearly different between phase-change type optical recording medium and magneto-optical recording medium, one is phase-change type material ( GeSbTe for example ), and the other are magnetic material ( TbFeCo for example ), obviously, their recording/reproducing method/apparatus are totally different with each other.

The requirement is still deemed proper and is therefore made FINAL.

2) Claim 4 is objected since the phrase " claim 41 " must be replaced by " claim 1 ".

3) Claims 1-8,23-30 and 45-52 are rejected under 35 U.S.C. 101 because the disclosed invention is inoperative and therefore lacks utility.

The invention of claims 1-8,23-30 and 45-52 are using a phase-change type recording medium and method/apparatus for recording/reproducing thereof but the recording layer is formed by alloy rare-earth metal

and transition metal or TbFeCo. This is totally against the principle of recording/reproducing phase-change type optical recording medium ( GeSbTe ) since TbFeCo is MO type, the recording layer is magnetic material and cannot turn into crystallize or amorphous states during recording process. The invention is therefore can not produces a " concrete " result and the invention cannot operate as intended without undue experimentation.

4) The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the mask layer formed of Sb ( claims 6,28 and 50 ) must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate

changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d).

If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

5) The I.D.S filed 9/28/2004, 6/09/2005, 10/27/2006 and 11/23/2007 have been considered by the Examiner. The foreign document(s), if they have not been written in English, are considered to the extent that could be understood from the English Abstract and the drawings.

Form PTO-1449 or PTO/SB/08 is(are) attached herein.

6) Claims 6,7,28,29,50 and 51 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The phrase "can be" ( claim 6,7,28,29,50 and 51 ) render(s) the claim(s) indefinite. The phrase "can be" has two meaning which indicates that the information data can reproduce and cannot be

reproduced, that would make the resulting claim(s) do not clearly set forth the metes and bounds of the patent protection desired.

7) The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless -

8) (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

9) Claims 1-8,23-30 and 45-52 are rejected under 35 U.S.C. 102(b) as being anticipated by KIM et al ( MAGNETO-OPTICAL DISK PROPERTIES ENHANCED BY NONMAGNETIC MASK LAYER, publication, date July 10<sup>th</sup>, 2000 ).

KIM et al discloses a method of recording information on a phase-change type optical recording medium ( Fig.1, recording layer TbFeCo (25) ), as claimed in claim 1, comprising changing absorption coefficients of optical constants of a recording layer and a dielectric layer of the recording medium using laser induced reaction and diffusion ( The optical recording medium having the same materials as applicant invention which capable of providing the same optical characteristics ).

As to claims 2-4, KIM et al shows the recording layer is rare-earth metal and transition metal ( Fig.1, recording layer TbFeCo (25) ).

As to claim 5, since the optical disk of KIM et al having the same materials as applicant claims in which the recording medium induces reaction and diffusion at 490°C and 580°C.

As to claims 6 and 7, KIM et al shows a protective dielectric layer, a mask layer formed of Sb, and a dielectric layer are sequentially formed on the recording layer, laser light is radiated to induce reaction and diffusion in the recording layer and the protective dielectric layer and to induce change in a crystalline structure of the mask layer, so that information can reproduce from the recording medium regardless of a diffraction limit ( Fig.1, layers Sb (15),  $A_2O_x$ , SiN (25) and SiN (25) ).

As to claim 8, KIM et al shows recording layer and dielectric layer are simultaneously formed, so that the recording layer and the dielectric layer have a mixed structure including materials for the recording layer and the dielectric layer ( Fig.1, recording layer layers TbFeCo (25), dielectric layers ZnS-SiO<sub>2</sub> (25) ).

Claims 23 and 45 are rejected with the same reasons set forth in claim 1 above.

Claims 24-26 and 46-48 are rejected with the same reasons set forth in claims 2-4 above.

Claims 25 and 49 rejected with the same reasons set forth in claim 5 above.

Claims 28,29,50 and 51 are rejected with the same reasons set forth in claims 7 and 8 above.

Claims 30 and 52 are rejected with the same reasons set forth in claim 8 above.

10) The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Applicant is reminded that in amending in response to a rejection of claims ( if the rejection involves with any applicable arts ), the patentable novelty must be clearly shown in view of the state of the art disclosed by the references cited and the objection made. Applicant must also show how the amendments avoid such references and objections. See 37 CFR § 1.111(c).

Form PTO-892 is attached herein.

11) Any inquiry concerning this communication or earlier communications from the examiner should be directed to TAN Xuan DINH whose telephone number is (571)272-7586. The examiner can normally be reached on MONDAY to FRIDAY from 9:00AM to 5:00PM.

The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.



Information regarding the status of an application may be obtained from the **Patent Application Information Retrieval (PAIR)** system. Status information for published applications may be obtained from either **Private PAIR** or **Public PAIR**. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at **866-217-9197** (toll-free). If you would like assistance from USPTO customer Service Representative or access to the automated information system, call **800-786-9191** (in USA or Canada) or **571-272-1000**.

/TAN Xuan DINH/  
Primary Examiner, Art Unit 2627  
September 4, 2008